COURSE SYLLABUS

COURSE TITLE: BIOL 120 The Nature of Life

COURSE CODE: 41165 TERM: Spring and Summer 2016

COURSE CREDITS: 3.0 DELIVERY: Lecture & Practicum (Lab)

CLASS SECTION: 01 START DATE: May 4, 2016

CLASS LOCATION: Biol 106 LAB LOCATION: Room 202/Biology Building

CLASSTIME: 8.30 to 10.50 pm (M-F) LAB TIME: 1:30-4:20pm

WEBSITE: via Blackboard

Course Description

This course is designed to introduce you to the vast and exciting field of biology, with a focus on events that are not normally visible to the naked eye.
Covering topics in cell biology, genetics and evolution, Biology 120.3 is one of two foundation courses for biology majors and for students going into Natural Sciences (Program C). Biology 120.3 also counts towards the biology requirements of a number of programs in different colleges across campus. Biology 121.3 -The Diversity of Life -is the sister course to Biology 120.3, and focuses on biological diversity, evolution, adaptations of organisms to specific environments and the factors influencing changes in biodiversity over time and space.

Anticipated Learning Outcomes

By the end of BIOL 120.3 you should be able to describe, classify, and discuss aspects of cell theory, cell division, genetics, bioenergetics, and the molecular basis for variation and natural selection. The laboratory portion of the course will help link these topics together with hands-on exercises. After completing the lab section of the course, you should know how to use a microscope to visualize cells and tissues and how to solve basic genetics problems. Detailed learning objectives for each lecture topic will be posted in Blackboard Learn

INSTRUCTOR CONTACT INFORMATION

Dr. Doug Smith	Biology RM 150 Biology dh.smith@usask.ca	966-4415
Gillian Murza Lab Coordinator	Biology Building RM 216 gillian.murza@usask.ca	966-4423

Office Hours: by appointment or after lecture

INSTRUCTIONAL RESOURCES: TEXTBOOK AND LAB MANUAL

The required textbook for Biology 120.3 is Biology - Exploring the Diversity of Life (2nd Canadian Edition) by Russell et al., Nelson Education Ltd., 2013.
The textbook will be referred to regularly during lectures both in terms of content and for the use of visual aids. It is also helpful for reviewing the material. You will not need to bring your textbook to class. The textbook material we will be covering is outlined on the second last page of this outline and will be the core testable material for the course.
Copies of the textbook will be available from the reserve desk in the Science Library, for short term, in library use. The lectures are intended to highlight and reinforce key concepts. Please see the Learning Objectives Summary, which will be posted on Blackboard along with this outline for a more detailed description of the topics you will be responsible for on the midterm and final exam.

The Lab Manual for Biology 120.3(2015-16 Edition) is required for the course, and must be brought to each lab session. It is available for purchase from the U of S Bookstore.

ONLINE RESOURCES

Partial class notes will be posted throughout the course on Blackboard. You should download the new notes once they are posted and then bring them to lecture.
Students who purchase a copy of the textbook (including the electronic version) will have access to MindTap. MindTap is an online platform that provides access to a digital copy of the textbook, animations, and self-tests.

STUDENT REVIEW AND COURSE PREPARATION (PURPLE PAGES)

There is prerequisite material that will not be directly covered in lectures.
This material is expected knowledge from high school courses. Students should review this information ahead of time because it is important for the understanding of many basic biological topics we will cover. In Russell et al. you will find this section in the middle of the book denoted by the purple coloured (pgs. F2-F56). This section contains basic information about the chemical and physical foundations of Biology, as well as a review of the macromolecules that make up living things (proteins, nucleic acids, carbohydrates and lipids). Knowledge of some of this information will be

needed to understand course content and answer questions on the midterm and final exams.

EVALUATION

Lecture Examinations: Students must bring their current University of Saskatchewan student card to all exams and be prepared to present it for verification purposes.
It is forbidden for students to utilize any type of electronic device during an exam (e.g., cell phone, dictionary, translator, etc.) (see Academic Honesty section below).

There will be one Midterm Lecture Exam in the class time on Thursday May 12th, 2016.
In the event that you miss this exam due to a medical emergency, death in the family, or another exceptional circumstance, you must advise your instructor within **TWO WORKING DAYS** of the missed exam. If you do not advise your instructor within these three working days, or do not have an acceptable excuse, a grade of zero will be assigned.

The Final Lecture Exam will be held during the period of May 26th and 27th, 2016, as arranged by the Registrar. Exact date is TBA. Accommodations will not be made for students making travel arrangements during this time frame. If a student is absent for a legitimate reason he/she may apply for a Deferred Final Exam within **THREE WORKING DAYS** of the missed exam. All applications are made to the Dean's Office of the College in which the student is registered.

Laboratory Examinations: There will be two Laboratory Exams. Lab Exam 1 will be on May, 10th, 2016. Lab Exam 2 will be on May 24th, 2016. Consult the 2015-16 Lab Manual for the procedure to follow for a missed Lab or Lab Exam. There are other regular assignments and quizzes required for successful completion of the laboratory component of the course, and these are outlined in the Lab Manual.

GRADES

The final grade is calculated as follows:

Lecture Midterm Exam	15%
Lecture Final Exam	45%
Lab Assignments and Quizzes	15%
Lab Exam 1	10%
Lab Exam 2	15%
Total	100%

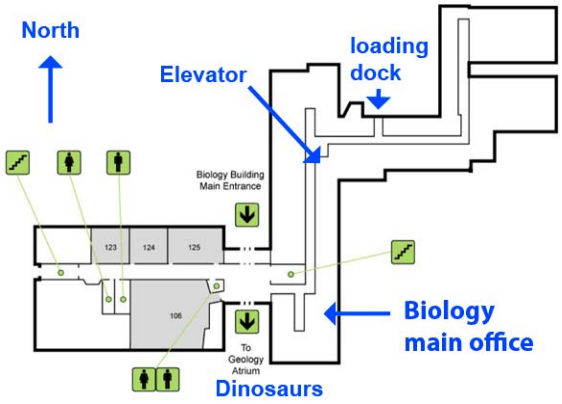
LABORATORIES

Labs begin in the week on May 5th, 2016 in Rms. 202 and 204 Biology. Students are expected to attend, and be prepared for, all scheduled labs, reviews, and final lab exams. A general lab schedule is provided at the end of this hand-out.

The 2015-2016 edition of the Lab Manual for Biology 120.3 is required for all labs. Please make sure that you have read the lab instructions and are prepared for the assigned exercises before going to each of your scheduled lab sessions.
Any other questions regarding the lab should be directed to the laboratory instructional staff in Rm. 216 of the Biology Building.

STUDENTS WITH A DISABILITY

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check http://students.usask.ca/disability/, or contact DSS at 966-7273 or dss@usask.ca. Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.



Students requiring an elevator for access to the second floor in the Biology Building (teaching labs and some faculty offices) may use the elevator in the Museum of Natural Sciences. Alternatively, or if offices on the 3rd floor of the Biology Building need to be accessed, there is an elevator located at the north end of the research wing, opposite Room 130.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behaviour that could potentially

result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.
All students should be familiar with the Regulations on Academic Student Misconduct http://www.usask.ca/secretariat/student-conduct appeals/StudentAcademicMisconduct.pdf as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/university_secretary/honesty/StudentNonAcademicMisconduct2012.pdf)
For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University http://www.usask.ca/secretariat/student-conduct-appeals/academic-misconduct.php

Chapters and sections in Russell et al: Biology, exploring the diversity of life
Please note: Materials in the following sections from Russell et al. constitute all of the testable material for the lecture exams. The lecture presentations are to highlight and synthesize essential concepts, and to provide opportunities for class discussion and interaction.
Chapter 2 – The Cell: an Overview – §2–2.5c
Chapter 8 – Cell cycles – §8–8.4
Chapter 9 – Genetic recombination – §9.3 a-c -Meiosis
Chapter 3 – Defining Life and its Origins – §3–3.5 c
Chapter 4 – Energy and Enzymes – §4–4.5d
Chapter 5 – Cell Membranes and Membrane Transport –§5–5.6 b
Midterm lecture exam
Chapter 10 – Mendel, Genes, & Inheritance – §10–10.2
Chapter 11 – Genes, Chromosomes, & Human Genetics – §11–11.2
Chapter 12 – DNA Structure, Replication,& Organization – §12–12.3
Chapter 13 – Gene structure & expression – §13–13.4
Chapter 6 – Cellular respiration – §6–6.7 d
Chapter 7 – Photosynthesis – §7–7.4 c

Final lecture exam is comprehensive, covering all of the lecture material in the course.

LECTURE AND LAB SCHEDULE FOR BIOLOGY 120.3 (Spring 2016)

TERM	LECTURE TOPIC	LAB TOPIC (see lab manual for details)
Day 1 (May 4)	Introduction and Cell Biology	NO LAB
Day 2 (May 5)	Cell Biology	LAB 1 – Introduction, Microscopy, and Cells
Day 3 (May 6)	Cell Biology and Cell cycle	LAB 2 – Eukaryotic Cell Structure and Function
Day 4 (May 9)	Cell Division and Origin of Life	LAB 3 – Osmosis and Cell Division
Day 5 (May 10)	Origin of Life, Energy and Enzymes	**Lab Final 1**
Day 6 (May 11)	Energy and Enzymes, Membrane Structure	NO LAB
Day 7 (May 12)	**Midterm Exam,** Membranes and Transport	LAB 4 – Sexual Life Cycles and Meiosis
Day 8 (May 13)	Inheritance	NO LAB
Day 9 (May 16)	Inheritance	LAB 5 – Introduction to Genetics
Day 10 (May 17)	Inheritance	LAB 6 – Human Genetics and Gene Linkage
Day 11 (May 18)	Molecular Genetics	NO LAB
Day 12 (May 19)	Molecular Genetics	Lab 7 – Biotechnology: Techniques and Applications
Day 13 (May 20)	Respiration	Lab Review
Victoria Day (May 23)	**Statutory Holiday**	NO LAB
Day 14 (May 24)	Respiration	**Lab Final 2**
Day 15 (May 25)	Photosynthesis and Review	NO LAB